

# **GREAT SMOKY MOUNTAINS NATIONAL PARK**

## **FY 2007 Annual Report**

**Prepared by**

### **NATURAL RESOURCES CONSERVATION SERVICE NATIONAL PLANT MATERIALS CENTER BELTSVILLE, MARYLAND**

#### **INTRODUCTION**

The current cooperative agreement between Great Smoky Mountains National Park (GRSM) and the National Plant Materials Center (NPMC) was signed in September 2006, for the fiscal years 2006-2010. The Great Smoky Mountains National Park and Foothills Parkway, has a need to preserve the native plant resources and revegetate parklands. The NPS requires that restoration of native plants will be accomplished using germplasm from populations as closely related genetically and ecologically as possible to park populations. The Great Smoky Mountains National Park has harvested seed from indigenous populations, but does not have the personnel, expertise, facilities or equipment needed to clean process, test and store the seed. The NRCS, National Plant Materials Center (NPMC) does have the personnel and is equipped to clean, process and store quantities of seed sufficient to meet the NPS needs within the required time frame. Technical expertise as necessary to achieve this goal will be provided by the NPMC under this agreement.

#### **ACCOMPLISHMENTS**

407 lbs. (bulk) of grass and forbs seed was harvested by GRSM staff, and then shipped to the NPMC in November 2006. The following table lists the 6 different lots of seed which was harvested from the GRSM's Cades Cove increase fields. The 407 lbs of bulk seed was cleaned (de-bearded and then run through a clipper) by NPMC staff to yield 200 lbs of cleaned seed. Also included in the table are the species, amounts of seed harvested, and the resulting cleaned seed weights. Five of the lots had enough seed to be tested for viability, purity and for noxious weed seed content.

#### 2007 Revegetation projects

November 2006 - 5.5 lbs (PLS) Virginia Wildrye shipped for revegetation of .25 Acre in Cades Cove

June 2007 – 32 lbs (PLS) of various grasses and forbs shipped for revegetation of 2 -3 acres in Cades Cove

#### Westrup Brush Machine Seed Cleaning Equipment Purchase

Currently the GRSM is harvesting several hundred pounds of native grass and forb seed annually from the seed production fields in Cades Cove. This future quantity of seed harvested in the park production fields will be increasing as the current plants mature and as the park staff continues planting additional plugs of other species. A major goal for the GRSM is to become self-sufficient and clean and store this seed in house. An essential step in achieving this goal is to have the necessary equipment to reach this goal instead of the current method of mailing it

back and forth between the GRSM in Tennessee and the National Plant Materials Center in Beltsville, Maryland. In 2007 funds were allocated to purchase necessary seed cleaning equipment.

After consulting with NPMC staff as well as other NRCS PMC and park service staff a LA-H Westrup Brush Machine and air filtration equipment was purchased. This will be installed and made operational in the very near future.

#### **ADDENDUM –**

A major concern is the amount and age of GRSM seed which is being stored at the Plant Materials Center. Currently a large amount, over 1400 pounds (bulk), of seed is in storage at the NPMC, and every year more and more seed is generated in the Cades Cove increase fields. The current rate of seed is sown is much less than what is being produced.

While the conditions that the seed is being stored are optimal, it is unavoidable that the viability of this seed is declining. It is our opinion that much more seed should be used for revegetation in Cades Cove and when possible along the Foothills Parkway so that the efforts and funds that have been used to produce this seed are not wasted.

To help alleviate the high amount of seed in storage we are currently consolidating many lots and further cleaning those lots to improve the P.L.S./bulk seed ratio.

#### **SEED PRODUCED IN THE GRSM CADES COVE INCREASE FIELDS FY 2007**

<b>Botanical Name</b>	<b>Common Name</b>	<b>Lot #</b>	<b>Bulk Weight (lbs.)</b>	<b>Cleaned Weight (lbs.)</b>	<b>Purity (%)</b>	<b>Viability (%)</b>	<b>Pure Live Seed (lbs.)</b>
Andropogon gerardii	Big bluestem	SWC-06 - GRSMINCRS	134	107.3	29.96	55	17.6
Andropogon glomeratus	Bushy Bluestem	SWC-06 - GRSMINCRS	24	2.9	74.42	89	1.8
Helianthus angustifolia	Swamp sunflower	SWC-06 - GRSMINCRS	12	1.5	36.44	60	.33
Lespedeza capitata	Round headed lespedeza	SWC-06 - GRSMINCRS	3	0.3			
Monarda fistulosa	Bee balm	SWC-06 - GRSMINCRS	8	0.25			
Saccharum giganteum	Beard Grass	SWC-06 - GRSMINCRS	35	16.6	99.36	67	11
Schizachyrium scoparium	Little bluestem	SWC-06 - GRSMINCRS	191	71.2	40	35	9.8
		<b>Total</b>	<b>407</b>	<b>200.05</b>			<b>20.8</b>



Steven Shaper and volunteers shown left are planting plugs in the Cades Cove Increase fields and Sneezeweed plants growing in the Cades Cove Increase fields. The seed produced from these plants will be used to re-vegetate existing fescue fields in the cove.



A close up of the wildflowers, Sneezeweed *Helenium autumnale* and Swamp Sunflower *Helianthus angustifolius*, growing in Cades Cove



GRSM staff and a volunteer hand harvesting Sugarcane plumegrass *Saccharum giganteum* and the seed stripper with a full load of seed which was then dried in the park and then transported to the NPMC for cleaning and processing